

### **3.8 TRANSPORTATION AND CIRCULATION**

This section identifies and analyzes the potential impacts of the Proposed Project on the local and regional transportation system in the vicinity of the project. The information contained in this section is based upon the *Long Beach Terminal Improvement Project Traffic Impact Analysis* prepared by Meyer Mohaddes Associates (September 2005). The full technical study is provided as Appendix G to this EIR.

#### **METHODOLOGY**

The *Traffic Impact Analysis* focused on the potential project impacts for the weekday AM and PM peak hours (the busiest morning hour between 7 AM and 9 AM and afternoon hour between 4 PM and 6 PM). The analysis was completed according to the guidelines set forth by the City of Long Beach, the County of Los Angeles Congestion Management Program, as well as standard practices of the traffic engineering profession. The specific intersections evaluated were coordinated with the City of Long Beach. These are depicted in Exhibit 3.8-1 and include the following intersections:

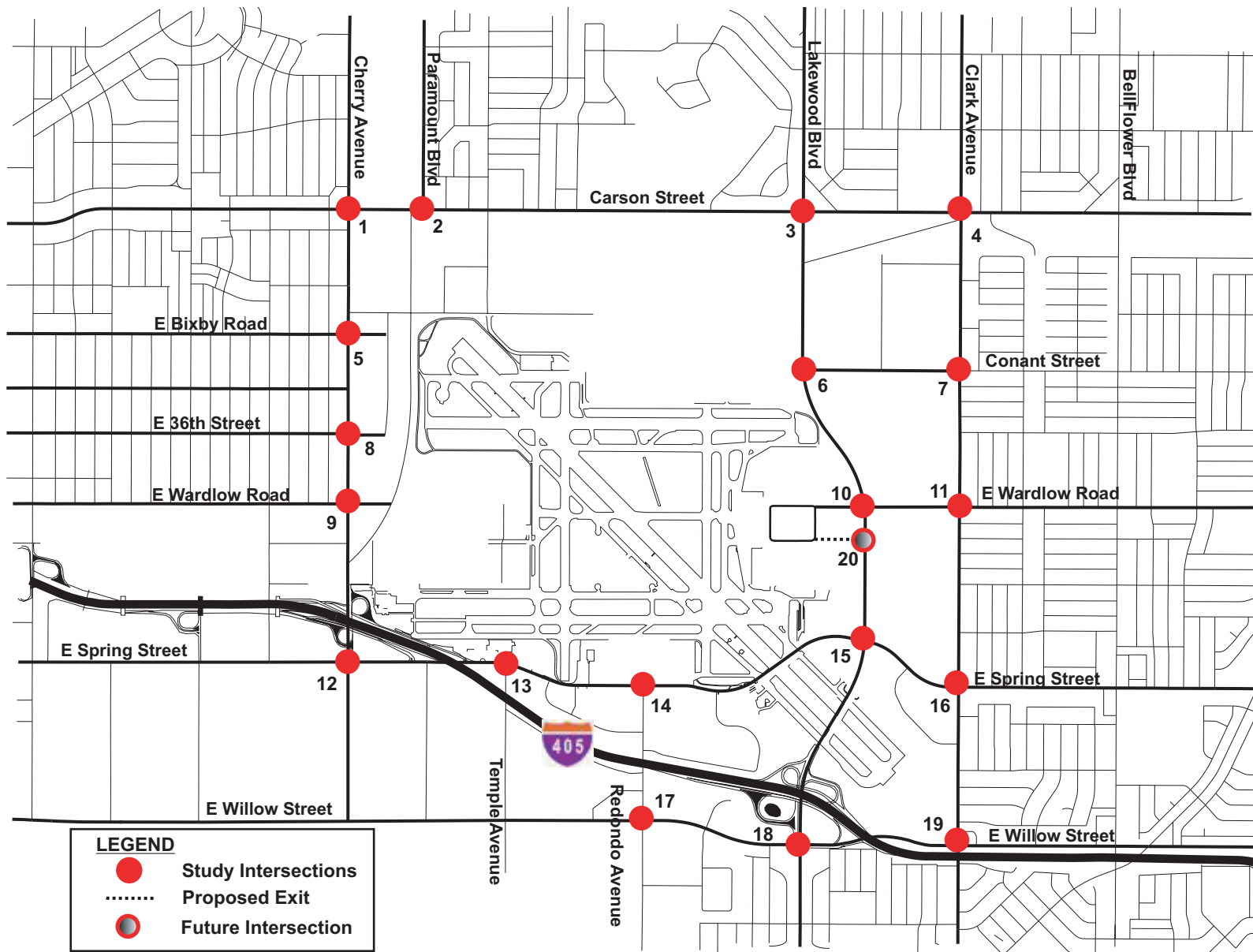
1. Carson Street and Cherry Avenue
2. Carson Street and Paramount Boulevard
3. Carson Street and Lakewood Boulevard
4. Carson Street and Clark Avenue
5. Bixby Road and Cherry Avenue
6. Conant Street and Lakewood Boulevard
7. Conant Street and Clark Avenue
8. 36th Street and Cherry Avenue
9. Wardlow Road and Cherry Avenue
10. Wardlow Road/Douglas Drive and Lakewood Boulevard
11. Wardlow Road and Clark Avenue
12. Spring Street and Cherry Avenue
13. Spring Street and Temple Avenue
14. Spring Street and Redondo Avenue
15. Spring Street and Lakewood Boulevard
16. Spring Street and Clark Avenue
17. Willow Street and Redondo Avenue
18. Willow Street and Lakewood Boulevard
19. Willow Street and Clark Avenue
20. New Exit and Lakewood Boulevard (only assumed in plus project conditions)

To ensure consistency with the recently-approved Douglas Park project, the *Traffic Impact Analysis* used data from the Douglas Park traffic study (2004). For existing conditions, some existing traffic volumes from the Douglas Park study were used and adjusted for 2005 conditions; new traffic counts were taken in 2004 at two locations. For future project conditions, traffic volumes from the Douglas Park EIR traffic study are considered future baseline volumes for the airport terminal improvements project.

#### **Field Inventory**

A field inventory was conducted for the 20 intersection locations and included review of the following existing conditions:

- Intersection geometric layout
- Lane configuration



## Traffic Study Intersections

Exhibit 3.8-1

Long Beach Airport Terminal Area Improvement Project



Source: Mestre Greve Associates, 2005



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- Posted speed limits
- Signal phasing
- Land uses
- Curbside parking
- Bus stop locations

### **Trip Generation and Trip Distribution**

In all project scenarios except the existing conditions analysis, assumptions have been made in regards to the trip generation potential of the project. Use of the facilities provided by the Proposed Project would not cause an increase in traffic. Additional trips would be associated with the Optimized Flights scenario.

The Optimized Flights scenario could result in up to 52 daily commercial flights and 25 daily commuter flights at the Airport. As discussed in Section 2.5, Project Description, this is the maximum reasonable flight level that could potentially occur with optimized operational procedures and aircraft, and still be within the noise budgets permitted by the Airport Noise Compatibility Ordinance. Neither the full utilization of 25 commuter flights at the Airport (which are the minimum number of commuter flights allowed by the Airport Noise Compatibility Ordinance), nor the potential increase of up to 11 commercial flights over current operational levels at the Airport, are causally related to the Proposed Project facilities improvements.

For the CEQA existing plus project analysis, and the year 2020 analyses, it has been assumed that the 11 additional commercial carrier flights under optimized conditions would occur in addition to full utilization of the 25 commuter flights. Analyses provided by HNTB (May 2004) estimated the flight arrival and departure times of the Optimized Flights, which in turn affects the times of passenger arrivals to, and departures from, the Airport.

The existing plus project analysis also assumes that the off-site satellite parking facility on Conant Street is still available for use. The 2020 project analyses assume that this parking area would not be available for use.

### ***Trip Generation***

The project trip generation is based on the increased number of flights due to the flight optimization. Typically, the Institute of Transportation Engineers (ITE) Trip Generation report<sup>1</sup> is used to obtain trip generation rates. For both commercial and general aviation Airports, ITE trip generation rates assume a minimum of 150 to 200 flights per day, with a percentage of the passengers having connecting flights (and do not enter or leave the airport in a vehicle). Since the Long Beach Airport is unique in its flight types and differs from the ITE case studies (non-connecting flights in Long Beach), number of flights (much lower than 150 to 200), and airport operating hours, it was determined that the use of ITE trip rates would not be appropriate. Instead, a set of specialized trip generation rates, based upon those that were developed for John Wayne Airport and Ontario International Airport, were calculated.

The John Wayne Airport study, conducted in 2001, showed the daily trip generation rate for the Average Day-Peak Month (ADPM) was 1.84 Trips/Daily Passenger, with the AM peak hour trips as five percent of daily trips, and the PM peak hour trips as eight percent of the daily trips. The full traffic impact analysis study is available for review at the City Planning Department.

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<sup>1</sup> "Trip Generation, 7<sup>th</sup> Edition", Institute of Transportation Engineers, Washington, D.C., 2003.

The Ontario International Airport study uses a formula to estimate the ADPM for non-connecting passengers, which provides an equivalent of 1.73 trips per non-connecting daily passenger in 2002, and their research further showed an eight percent peak hour factor. Thus, the two comparable studies in Southern California yield ADPM trip rates varying from 1.73 trips/passenger to 1.84 trips/passenger and from five to eight percent of daily trips in the peak hour.

For this Long Beach Airport study, a similar estimate of daily and peak trips per passenger was made. Daily traffic volumes were taken over two days on Donald Douglas Drive west of Lakewood Boulevard. Concurrently, passenger volumes for arriving and departing flights were estimated for the same two days, using flight arrival and departure times. Using this data, the ratio of vehicle trips ends (in and out of the airport) per passenger was calculated for both days, and an estimate of the 7-9 AM and 4-6 PM peak periods traffic volumes were made. The resulting trip generation was 1.77 daily trips per passenger and the AM traffic peak hour representing approximately 6.0 percent of the daily trips and 5.5 percent of the daily trips in the PM traffic peak hour. It should be noted that this traffic generation factor expresses the trips with regards to the number of daily trips per passenger, but the number factors in employee trips and delivery trips as well.

A comparison of the three different methodologies for determining trip generation resulted in very similar results (within a four percent variance on a daily basis). For this analysis the Long Beach Airport trip generation, the Daily Trip Rate of 1.77 was selected, along with a six percent AM and PM peak hour factor. As shown in Table 3.8-1, the 1.77 trip rate falls between the two local studies at Ontario International and John Wayne Airports.

**TABLE 3.8-1  
TRIP GENERATION METHODOLOGY COMPARISON**

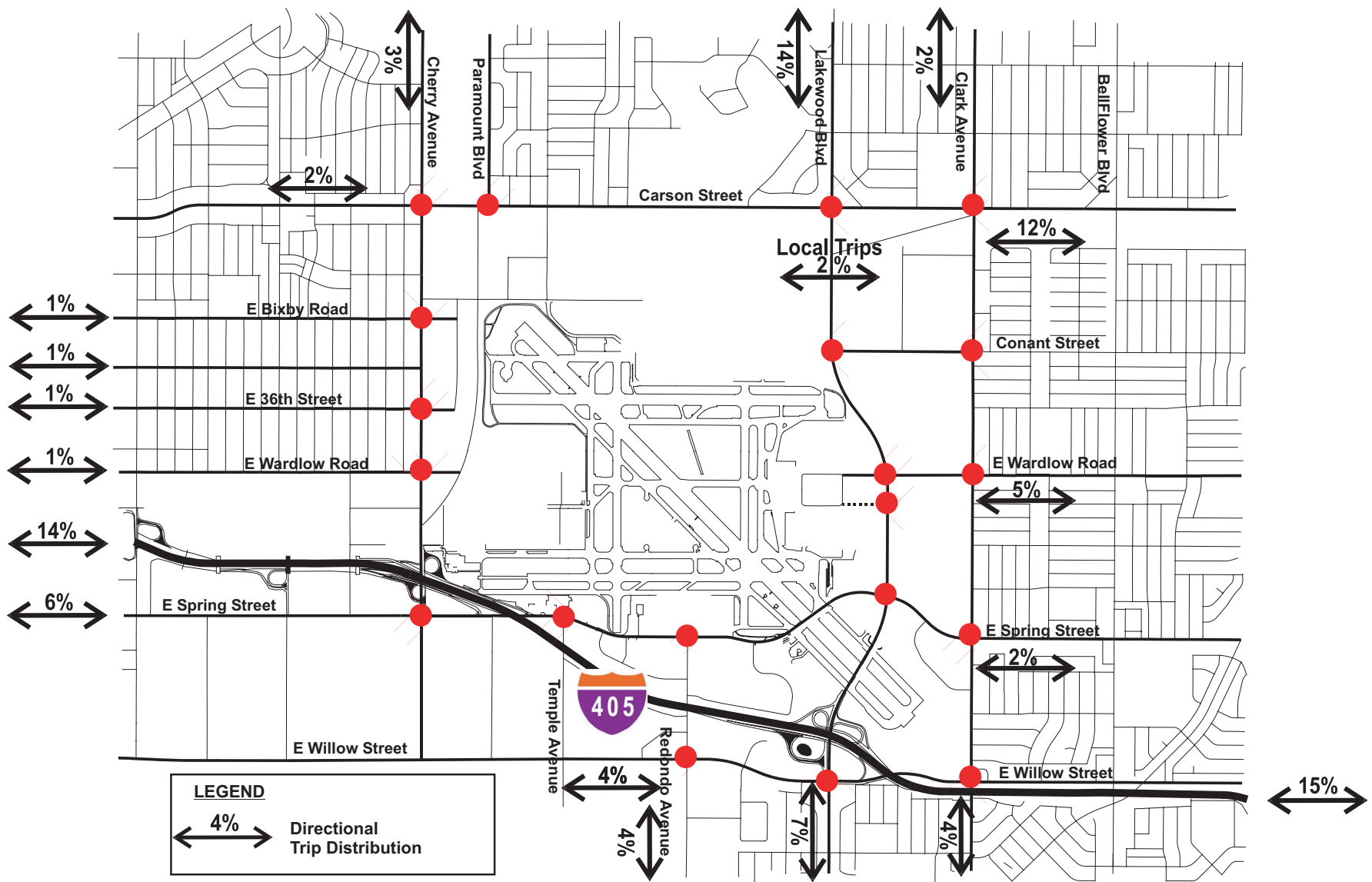
	<b>Long Beach Airport Empirical Data Trip Generation Methodology</b>	<b>John Wayne Airport Trip Generation Methodology</b>	<b>Ontario Airport Trip Generation Methodology</b>
Daily Traffic Volumes	29,240	30,397	29,188
AM Peak Hour Volume	1,754	1,520	2,335
PM Peak Hour Volume	1,754	2,431	2,335
Source: Meyer Mohaddes Associates, 2005.			

### ***Trip Distribution***

Trip distribution for the Optimized Flights scenario was obtained by using the travel demand model that is currently being used for the City's Mobility Element update. A "select zone" run was made of the traffic analysis zone that contains the airport; the results show the generalized trip distributions for the zone. The trip distribution was then refined along the roadways in the area, and the resultant trip distribution is shown in Exhibit 3.8-2.

### **Traffic Operations Analysis Methodology for Signalized Intersections**

Per City of Long Beach guidelines, the Intersection Capacity Utilization (ICU) method of intersection analysis was used to determine the intersection volume-to-capacity ratio (V/C) and corresponding level of service (LOS) based on the turning movements and intersection characteristics at the signalized intersections. A capacity value of 1,600 vehicles per hour per



## Trip Distribution AM & PM

Long Beach Airport Terminal Area Improvement Project

Exhibit 3.8-2



lane was used with a loss time factor of that varied from 0.10 to 0.18 (loss factor accounts for the yellow and all red phases of a traffic signal when no traffic moves through the intersection) depending on the number of critical phases in the traffic signal. The V/C for the intersection corresponds to a LOS value, which describes the intersection operations.

Levels of Service vary from A through F, with A representing the best possible conditions, free flow, and F representing forced flow or failing/congested conditions. Generally, LOS D or better is considered acceptable in urban areas such as the study area for the proposed project. However, some locations in the study area are currently operating with levels of service in the E and F range. For this analysis, the ranges of volume-to-capacity ratios summarized in Table 3.8-2 were used to determine LOS for signalized study intersections.

**TABLE 3.8-2  
LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS**

Level of Service	Description	Volume to Capacity Ratio
A	Excellent operation. All approaches to the intersection appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation.	0-.60
B	Very good operation. Many drivers begin to feel somewhat restricted within platoons of vehicles. This represents stable flow. An approach to an intersection may occasionally be fully utilized and traffic queues start to form.	.61-.70
C	Good operation. Occasionally drivers may have to wait more than 60 seconds, and back-ups may develop behind turning vehicles. Most drivers feel somewhat restricted.	.71-.80
D	Fair operation. Cars are sometimes required to wait more than 60 seconds during short peaks. There are no long-standing traffic queues. This level is typically associated with design practice for peak periods.	.81-.90
E	Poor operation. Some long-standing vehicular queues develop on critical approaches to intersections. Delays may be up to several minutes.	.91-1.00
F	Forced flow. Represents jammed conditions. Backups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the intersection approach lanes; therefore, volumes carried are not predictable. Potential for stop and go type traffic flow.	Over 1.00
Source: <i>Highway Capacity Manual</i> , Special Report 209, Transportation Research Board, Washington, D.C., 1985 and <i>Interim Materials on Highway Capacity</i> , NCHRP Circular 212, 1982.		

### **Traffic Operations Analysis Methodology for Unsignalized Intersections**

The only unsignalized intersection in this traffic study is at the new proposed exit from the Airport. This new exit would be a one-way eastbound exit (located south of the Lakewood/Donald Douglas intersection), and would allow only eastbound right turns onto southbound Lakewood Boulevard. Because this intersection would not exist unless implemented as part of the Proposed Project, it is analyzed only under the “plus project” conditions, and was evaluated using the Highway Capacity Methodology (HCM 2000) for unsignalized intersections. This methodology estimates the average total delay for each of the traffic movements and determines the level of service for each movement. The overall average delay is measured in seconds per vehicle, and level of service is then calculated for the entire intersection.

The HCM delay value is translated to a LOS estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM delay value range, as shown in Table 3.8-3.

**TABLE 3.8-3  
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS**

Level of Service (LOS)	Highway Capacity Manual Average Control Delay (seconds/vehicle)	Level of Service Description
A	< 10	Little or no delay
B	> 10 and < 15	Short traffic delays
C	> 15 and < 25	Average traffic delays
D	> 25 and < 35	Long traffic delays
E	> 35 and < 50	Very long traffic delays
F	> 50	Severe congestion
Source: Highway Capacity Manual, 2002.		

### **Congestion Management Plan**

According to the Congestion Management Plan (CMP) Traffic Impact Analysis (TIA) Guidelines developed by Metropolitan Transportation Authority (MTA), a traffic impact analysis is required given the following conditions:

- CMP arterial monitoring intersections, including freeway on- or off-ramps, where the proposed project would add 50 or more trips during either the AM or PM weekday peak hours.
- CMP freeway monitoring locations where the proposed project would add 150 or more trips during either the AM or PM weekday peak hours.

The methodology for estimating future traffic volumes for the CMP analyses is a multi-step process. First, existing traffic conditions at CMP freeway monitoring stations were obtained in the Congestion Management Program documentation published by MTA in 2004. Included are AM and PM peak hour traffic demands, capacity, and level of service (LOS) designations. The analysis is conducted for the 2012 probable project build-out. Next, traffic growth estimates, without the proposed development, were extrapolated from the 2003 CMP data set using a 0.007 yearly rate of growth, to determine the demand/capacity (D/C) ratio and LOS. Volume added as a result of the project was calculated using the trip distribution data from the traffic model used to assess project impacts. The CMP monitoring stations are located several miles from the airport, and the SCAG Destination 2030 report showed that a large percentage of Long Beach airport passengers are from the immediate area. Therefore, it was assumed that only 75 percent of the traffic that left/arrived at the airport from the freeways are still on I-405 at the monitoring stations that are west of I-710 (Santa Fe Avenue) and east of I-605 (just north of SR-22). Using this data, added traffic demand at the two CMP stations on I-405 at Santa Fe Avenue and just north of SR-22 were assessed. The added volume as a result of the project was then added to the projected growth for 2013 without the project, and divided by capacity to determine the projected 2013 D/C ratio for a.m. and p.m. peak periods with the project.

The closest CMP arterial monitoring stations to the project with 50 or more added trips in the AM or PM peak hours are at the intersections of Lakewood Boulevard and Carson Street, and Lakewood Boulevard and Willow Street.

### **Parking**

The effects of parking availability were considered as part of the trip generation study. The parking demand for the project was obtained from a Parking Adequacy Analysis study that was

conducted by International Parking Design for the Airport in 2001. The report concluded that 2.75 parking spaces would be needed for each 1,000 annual enplanements.

### **3.8.1 EXISTING CONDITIONS**

The existing roadway network within the study area is illustrated in Exhibit 3.8-1, Traffic Study Intersections. All passenger access to the Airport is via Donald Douglas Drive and Lakewood Boulevard.

Lakewood Boulevard is a north-south facility, classified as a regional roadway in the City of Long Beach's General Plan. It is currently four-lanes in each direction within the study area, with a raised median and a 40 MPH speed limit. 2001 daily traffic volumes were approximately 47,000 vehicles per day.

Donald Douglas Drive is the entrance road to the Long Beach Airport, but also supplies access to a limited amount of office space, Million Air, a franchised general aviation services company, Gulfstream aircraft manufacturing, and other aviation businesses. Donald Douglas Drive forms a one-way, two-lane loop through the airport. The roadway is two lanes in each direction between the loop and Lakewood Boulevard. Daily traffic volumes for 2004 were approximately 16,000 vehicles per day.

Wardlow Road, opposite Donald Douglas Drive at Lakewood Boulevard, is a four-lane roadway with a 35 mile per hour speed limit. This roadway is classified as a Minor Roadway in the City's General Plan. Traffic volumes for 2001 were approximately 8,400 vehicles per day.

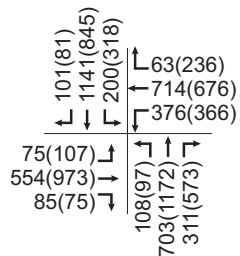
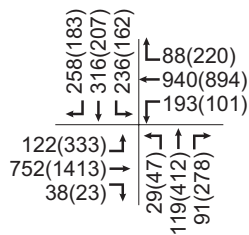
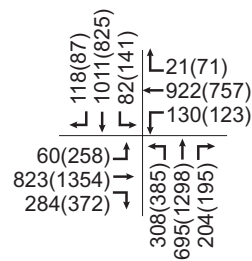
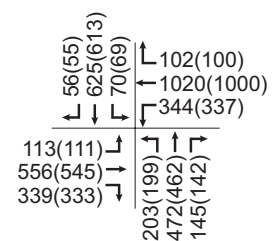
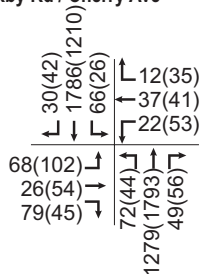
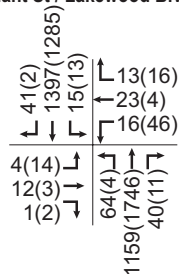
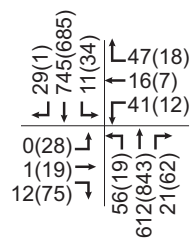
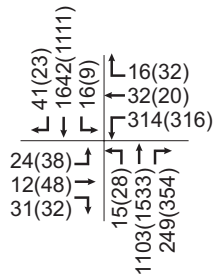
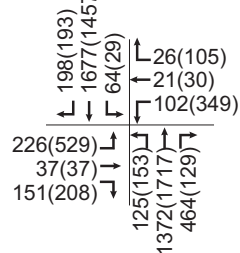
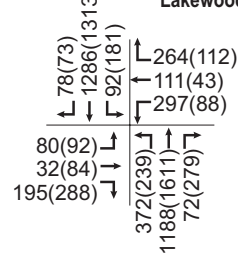
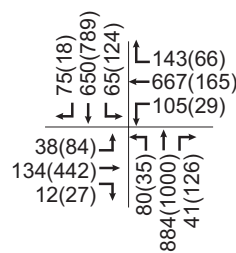
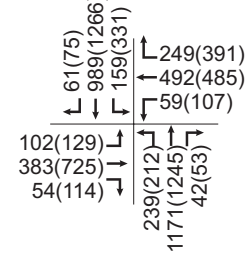
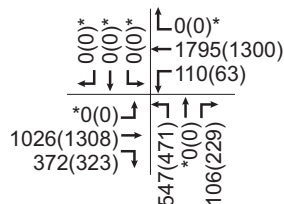
#### **Existing Traffic Volumes**

Intersection traffic counts for the weekday morning and evening peak traffic periods (7-9 AM and 4-6 PM) were obtained through two means. To ensure consistency with the Douglas Park EIR, existing traffic volumes for 17 study intersections were taken from the Douglas Park traffic study, and adjusted using a City supplied growth factor of one percent annually, in order to adjust them to 2005 conditions. At Lakewood Boulevard/Donald Douglas Drive, new AM and PM peak period turning movement traffic counts were taken in May 2004 and adjusted to 2005 conditions. The intersection of Cherry Avenue and E. 36<sup>th</sup> Street was not analyzed in the Douglas Park traffic study, and new counts were taken April 2005. The analysis considered the busiest hour of airport related traffic within each of the two peak periods.

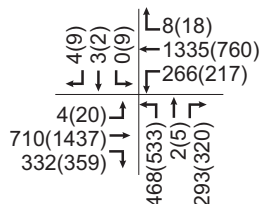
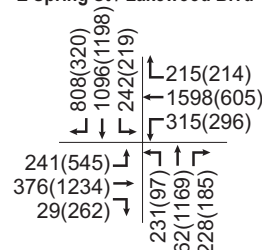
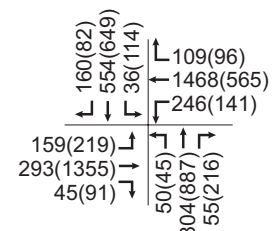
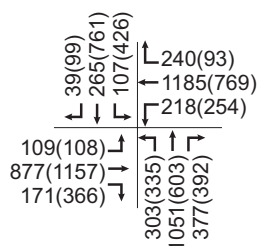
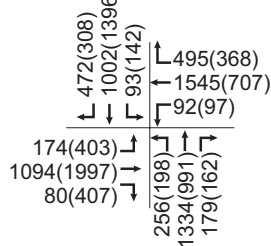
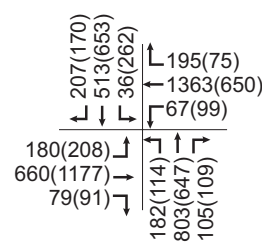
Exhibit 3.8-3 illustrates the existing traffic volumes at each of the study intersections for peak hours. Based on the peak one-hour traffic volumes in the study area during the peak analysis periods and the analytical methodology described above, the weekday AM and PM peak-hour intersection levels of service were analyzed at the study intersections. Table 3.8-4 summarizes the existing weekday peak-hour level of service. As illustrated in the table, the following three intersections currently operate at LOS E or LOS F:

- Carson Street and Clark Avenue (LOS E, PM)
- Wardlow Road and Cherry Avenue (LOS E, PM)
- Willow Street and Lakewood Boulevard (LOS E, AM; LOS F, PM)

All of the remaining study area intersections currently operate at acceptable levels of service (LOS D or better) during the peak periods.

**1 Carson St / Cherry Ave****2 Carson St / Paramount Blvd****3 Carson St / Lakewood Blvd****4 Carson St / Clark Ave****5 Bixby Rd / Cherry Ave****6 Conant St / Lakewood Blvd****7 Conant St / Clark Ave****8 E 36th St / Cherry Ave****9 E Wardlow Rd / Cherry Ave****10 E Wardlow Rd / Dr. Douglas Rd / Lakewood Blvd****11 E Wardlow Rd / Clark Ave****12 E Spring St / Cherry Ave****13 E Spring St / Temple Ave**

\*Nominal Trips

**14 E Spring St / Redondo Ave****15 E Spring St / Lakewood Blvd****16 E Spring St / Clark Ave****17 E Willow St / Redondo Ave****18 E Willow St / Lakewood Blvd****19 E Willow St / Clark Ave**

Key:

180 (208) → AM (PM) Volume

**Existing Peak Hour Volumes – AM (PM)****Exhibit 3.8–3***Long Beach Airport Terminal Area Improvement Project*

**TABLE 3.8-4  
EXISTING WEEKDAY PEAK-HOUR INTERSECTION LEVELS OF SERVICE**

No.	Intersection	Existing Weekday Peak Hour			
		AM		PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	Carson Street and Cherry Avenue	C	0.736	D	0.856
2	Carson Street and Paramount Boulevard	B	0.623	D	0.877
3	Carson Street and Lakewood Boulevard	C	0.730	D	0.811
4	Carson Street and Clark Avenue	D	0.804	E	0.967
5	Bixby Road and Cherry Avenue	A	0.586	B	0.613
6	Conant Street and Lakewood Boulevard	A	0.478	A	0.539
7	Conant Street and Clark Avenue	A	0.416	A	0.417
8	36th Street and Cherry Avenue	B	0.630	B	0.697
9	Wardlow Road and Cherry Avenue	D	0.868	E	0.966
10	Wardlow Road/Douglas Drive and Lakewood Boulevard	C	0.724	C	0.739
11	Wardlow Road and Clark Avenue	B	0.643	A	0.576
12	Spring Street and Cherry Avenue	C	0.728	D	0.834
13	Spring Street and Temple Avenue	B	0.665	B	0.646
14	Spring Street and Redondo Avenue	A	0.571	C	0.741
15	Spring Street and Lakewood Boulevard	D	0.889	D	0.864
16	Spring Street and Clark Avenue	B	0.665	C	0.791
17	Willow Street and Redondo Avenue	C	0.764	D	0.879
18	Willow Street and Lakewood Boulevard	E	0.943	F	1.043
19	Willow Street and Clark Avenue	D	0.900	D	0.804
V/C = volume to capacity ratio for signalized intersections Delay is in seconds per vehicles for unsignalized intersections					
Source: Meyer Mohaddes Associates, 2005.					

### **Existing Transit System**

Long Beach Airport is currently served by one Long Beach Transit route, which provides easy connection and transfers to major locations in the Los Angeles and Orange Counties.

Long Beach Transit Route # 111 runs between downtown Long Beach and Lakewood Center Mall. Starting its service from the downtown Long Beach transit mall, this route travels through Long Beach along Broadway, crossing Cherry Avenue, Redondo Avenue; then along Ximeno Avenue to Lakewood Boulevard. It then proceeds northerly along Lakewood Boulevard, proceeds through the Long Beach Airport, then continues north towards the Lakewood Mall and South Street where it then continues southerly back to downtown Long Beach.

During weekdays this route starts operation at about 5 AM in the morning and runs until 12:30 AM, with headways of about 30 minutes until 6:30 PM and a 60-minute headway thereafter. During weekends and holidays the route operates from about 5:40 AM to 12:30 AM, with headways of about 60 minutes.

### **Related Planning Programs**

The City of Long Beach General Plan *Circulation Element* provides direction pertaining to transportation issues in the vicinity of the Airport. The *Circulation Element* was adopted in 1991. The goals and objectives that apply to the Proposed Project are outlined below.

In addition, both the City *Strategic Plan 2010* and the Regional Transportation Plan (RTP) prepared by SCAG were reviewed for applicable policies. For the *Strategic Plan 2010* there are a number of policies related to business growth and providing for development of the Airport, while being consistent with the noise ordinances. However, these policies have all been addressed elsewhere in the EIR. The RTP is a document that addresses regional needs of the six-county SCAG region. The plan is intended to provide “the basic policy and program framework for long term investment in our vast regional transportation system in a coordinated, cooperative, and continuous manner.” The Proposed Project is not proposing any changes to the operations at the Airport or other uses that would be generating substantial traffic that would be considered inconsistent with the goals and policies outlined in the RTP. The magnitude of the Proposed Project is not of the level that would influence regional direction or policy. SCAG in their response to the NOP indicated that the project would not be considered a regionally significant project; therefore, the focus of the policy analysis is at the local level.

### ***City of Long Beach Circulation Element***

#### **Transportation Goals**

Goal: The City of Long Beach is to maintain or improve our current ability to move people and goods to and from activity centers while reinforcing the quality of life in our neighborhoods.

Objective 1: Maintain traffic and transportation service levels at Level of Service “D” or at the 1987 LOS where that LOS was worse than “D.”

Objective 2: Accommodate reasonable, balanced growth.

Objective 3: Maintain or enhance our quality of life.

#### ***Recommendations from Transportation Element***

The following objectives and policies are taken from the “Recommendations” section of the Transportation Element, which address the future growth scenarios within the City and anticipated traffic problems associated with them. In order to manage the increase of traffic without jeopardizing the quality of life in the residential communities, a “policy plan” was created. The policy plan includes objectives and guidelines that provide guidance in decisions related to traffic operations and roadway improvements in determining the actions to implement in land use decisions.

#### ***Roadway Improvements and Better Utilization of City Streets***

##### **Objectives:**

- Maintain Level of Service D or better on all streets and at all intersections.
- Increase efficiency of operations of regional corridors, and major and minor arterials.

Policy 3: Apply system management techniques, such as traffic signal synchronization or computerization, reversible lanes, parking prohibitions, left hand turn pockets, and recessed bus bays where appropriate to optimize the existing capacity on Regional Corridors, Major Arterials, and Minor Arterials.

## *Airport*

### Objectives:

- Support the Long Beach Airport as a viable commercial aviation facility to serve the community needs while maintaining the quality of life of the adjacent residential neighborhoods.
- Provide convenient ground access to and from the Airport by using public and private transit services.

Policy 1: Adopt a long-range development plan for Long Beach Airport when the court decision regarding the number of flights and noise regulations is rendered. When this master plan is adopted, the Transportation Element should be amended accordingly.

Policy 5: Monitor future development projects based on the effectiveness of trip reduction program.

### **3.8.2 IMPACT ANALYSIS**

#### **Thresholds of Significance**

The thresholds of significance for this EIR have been determined in cooperation with the City of Long Beach and are presented below.

In general, impacts to transportation, circulation and parking would be considered to be significant if:

- The resulting level of service at an intersection is E or F, and the project related traffic causes a volume to capacity (V/C) increase of 0.02 or higher to the critical movements.
- If the project would contribute 500 or more net daily trips (total both directions) or 50 more net hourly trips (total both directions) to a residential street segment.
- Either individually or cumulatively a level of service standard established by the county congestion management agency for designated roads or highways would be exceeded.
- If the project would result in inadequate parking capacity.
- If the project would result in noncompliance with SCAG regional transportation policies or inconsistency with the General Plan or Strategic Plan.

#### **Impact Analysis**

The traffic analysis compares each of the project alternatives to existing conditions for a determination of project impact significance, in accordance with CEQA (guidelines section 15125(a)). In the CEQA Existing Plus Optimized Flights scenario, the analysis considers impacts associated with up to 52 commercial flights (optimized conditions) and 25 commuter flights, overlaid on existing traffic conditions. This analysis assumes all aspects of the Proposed Project, including terminal area improvements, the proposed parking structure, and the new exit from Donald Douglas Drive to Lakewood Boulevard for southbound traffic are all completed. For this Existing Plus Optimized Flights Scenario, the existing off-site parking facility is still in place and available for airport use.

In addition to the Existing Plus Optimized Flights scenario, which is required by CEQA, the analysis also provides a long-range (year 2020) analysis that considers the Optimized Flights overlaid on projected 2020 traffic levels. This analysis provides a comprehensive cumulative analysis. Since this evaluation considers regional growth and cumulative projects, the 2020 Optimized Flights scenario is compared to the 2020 No Project Optimized Flights scenario to determine impacts.

### ***Proposed Project***

***Threshold 1: Impacts to transportation and circulation would be considered significant if the resulting level of service is E or F, and the project related traffic causes a volume to capacity (V/C) increase of 0.02 or higher to the critical movements.***

### **Construction-Related Impacts**

There would be temporary increases in traffic volumes on project area roadways during site preparation and construction of the Proposed Project due to traffic generated by construction workers' vehicles and trucks transporting materials and equipment to and from the site.

Construction workers would generate approximately 50 peak hour trips during the most active construction period. The workers would generate approximately 50 trips during the morning peak-hour (50 in and 0 out) and 50 trips during the afternoon peak-hour (0 in and 50 out), with all workers parking on-site. The construction related truck trips that occur while the peak numbers of employees are present would be minimal, with construction materials being delivered in the off-peak hours. Peak truck trips would occur during the pouring of concrete for the parking structure, with one truck approximately every 15 minutes, from 7:00 AM to 4:00 PM, or four trips during the AM peak hour. However, when the concrete pours are being made, the number of employees required on site would be lower than 50. Traffic generated during site construction/preparation would result in a short-term minimal impact on the roadways in the immediate project vicinity. No significant impacts are anticipated and no mitigation measures are required. It should be noted, however, that SC 3.7-1 would require the contractor to prepare a Traffic Control Plan to ensure adequate emergency access is maintained at the Airport during construction.

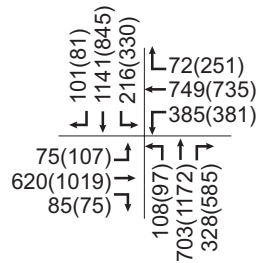
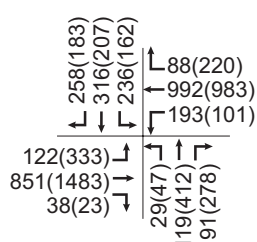
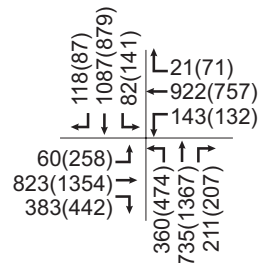
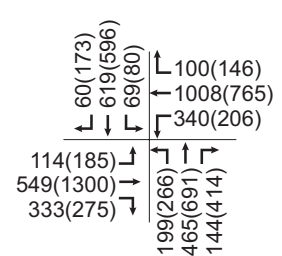
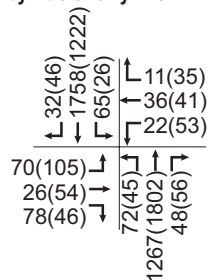
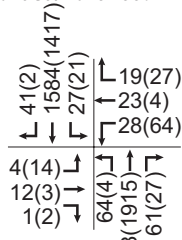
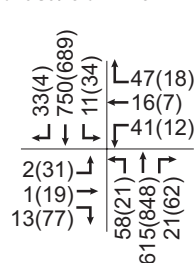
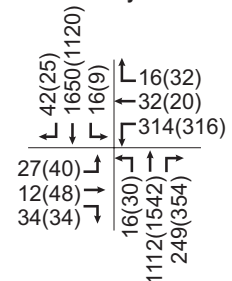
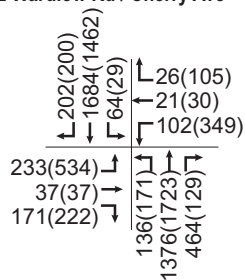
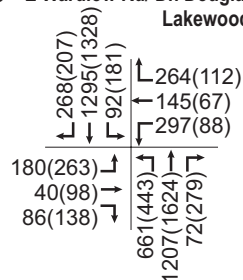
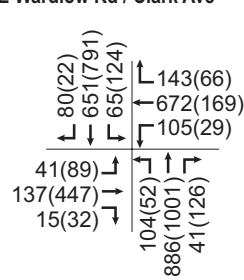
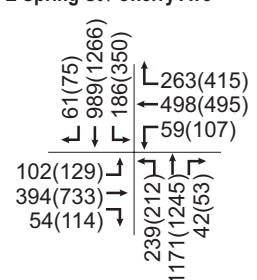
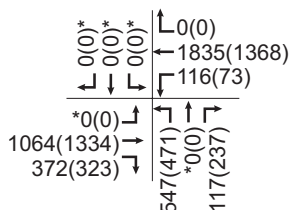
### **Project Related Impacts**

#### ***Existing Plus Proposed Project***

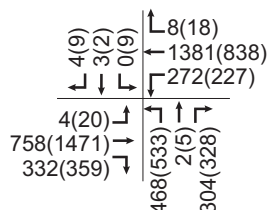
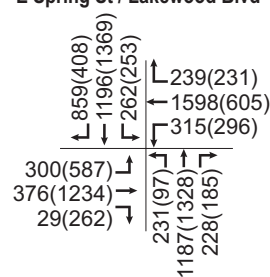
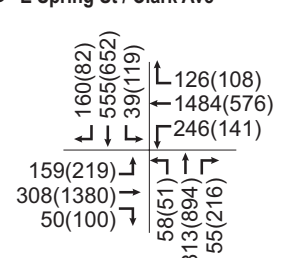
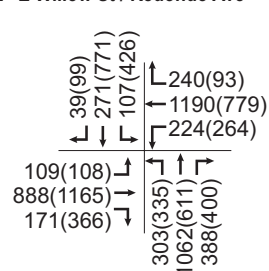
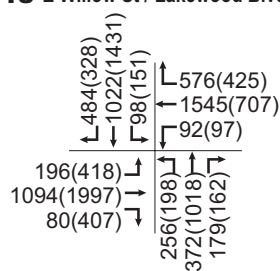
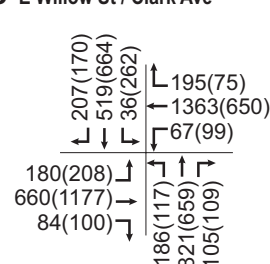
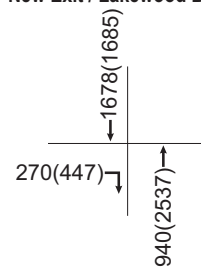
Under the Existing Plus the Proposed Project scenario, there would not be any additional trips because no additional flights or other attractions would be provided. As discussed above, the trips are associated with the number of passengers and flight levels. As a result, the expected traffic volumes associated with the Existing Plus Proposed Project would be generally the same as existing conditions. This scenario would not create an undesirable peak hour LOS at any of the key intersections.

#### ***Year 2020 Evaluation***

The Proposed Project would not substantially alter the traffic generation rates for the Airport. The Proposed Project would not result in any additional flights or passengers. The terminal area improvements would result in a small incremental increase in the trips related to deliveries and employee trips associated with the increased concessions area. However, the increase in

**1 Carson St / Cherry Ave****2 Carson St / Paramount Blvd****3 Carson St / Lakewood Blvd****4 Carson St / Clark Ave****5 Bixby Rd / Cherry Ave****6 Conant St / Lakewood Blvd****7 Conant St / Clark Ave****8 E 36th St / Cherry Ave****9 E Wardlow Rd / Cherry Ave****10 E Wardlow Rd/ Dr. Douglas Rd / Lakewood Blvd****11 E Wardlow Rd / Clark Ave****12 E Spring St / Cherry Ave****13 E Spring St / Temple Ave**

\*Nominal Trips

**14 E Spring St / Redondo Ave****15 E Spring St / Lakewood Blvd****16 E Spring St / Clark Ave****17 E Willow St / Redondo Ave****18 E Willow St / Lakewood Blvd****19 E Willow St / Clark Ave****20 New Exit / Lakewood Blvd**

## Existing with Optimized Flights - Peak Hour Volumes – AM(PM)

Long Beach Airport Terminal Area Improvement Project

Exhibit 3.8-4



concessions area would not be sufficient to alter the overall trip generation rate used for the Airport.

As previously indicated, both the full utilization of all 25 commuter flights and the potential increase of up to 11 commercial flights over current operational levels at the Airport are not causally related to the project proposed facilities improvements. If the operational procedures and aircraft used are optimized so that additional flights could operate within the noise budget permitted by the Airport Noise Compatibility Ordinance, then the flights are allowed regardless of whether the Proposed Project is approved or built. This would not be considered a discretionary action. The discussion of impacts associated with the additional traffic generation with an increase in flights is provided below under the Optimized Flights scenario.

#### Additional Effects Related to Optimized Flights

##### *Existing Plus Optimized Flights Scenario*

As discussed above under trip generation methodology, trips are associated with the number of passengers and flight levels. The daily trip rate of 1.77, along with a six percent AM and PM peak hour factor was used to estimate the traffic volumes associated with the Optimized Flights conditions using the assumption of 16,520 passengers in the ADPM. This resulted in an estimated daily peak hour trip generation of 1,754 trips for both the AM and PM peak hours. As compared to the 2005 traffic volumes, this is an increase of approximately 830 trips in the AM peak hour and 880 trips in the PM peak hour.

The traffic model was used to assess the impacts of the estimated Optimized Flights conditions. The Existing Plus Optimized Flights scenario traffic volumes for the AM and PM peak hour conditions are shown in Exhibit 3.8-4. Table 3.8-5 provides the LOS for each of the study intersections for the weekday AM and PM peak hours.

As can be seen in Table 3.8-5, there are five intersections that are expected to operate at LOS E or F in the AM or PM peak hours in the Existing Plus Optimized Flights conditions. These intersections are:

**TABLE 3.8-5  
EXISTING PLUS OPTIMIZED FLIGHTS SCENARIO PEAK-HOUR INTERSECTION LEVELS OF SERVICE**

Intersection		Existing Weekday Peak Hour									
		AM					PM				
		Existing		Existing Plus Optimized		Diff. due to Proposed Project	Existing		Existing Plus Optimized		Diff. due to Proposed Project
		LOS	V/C or Delay	LOS	V/C or Delay		LOS	V/C or Delay	LOS	V/C or Delay	
1	Carson Street and Cherry Avenue	C	0.736	C	0.753	0.017	D	0.856	D	0.877	0.021
2	Carson Street and Paramount Boulevard	B	0.623	B	0.639	0.016	D	0.877	D	0.895	0.018
3	Carson Street and Lakewood Boulevard	C	0.730	D	0.828	0.098	D	0.811	D	0.853	0.042
4	Carson Street and Clark Avenue	D	0.804	D	0.807	0.003	E	0.967	E	0.972	0.005
5	Bixby Road and Cherry Avenue	A	0.586	A	0.596	0.010	B	0.613	B	0.616	0.003
6	Conant Street and Lakewood Boulevard	A	0.478	A	0.524	0.046	A	0.539	A	0.588	0.049
7	Conant Street and Clark Avenue	A	0.416	A	0.422	0.006	A	0.417	A	0.421	0.004
8	36th Street and Cherry Avenue	B	0.630	B	0.636	0.006	B	0.697	C	0.702	0.005
9	Wardlow Road and Cherry Avenue	D	0.868	D	0.890	0.022	E	0.966	E	0.980	0.014
10	Wardlow Road/Douglas Drive and Lakewood Boulevard	C	0.724	D	0.852	0.128	C	0.739	C	0.711	-0.028
11	Wardlow Road and Clark Avenue	B	0.643	B	0.647	0.004	A	0.576	A	0.580	0.004
12	Spring Street and Cherry Avenue	C	0.728	C	0.731	0.003	D	0.834	D	0.836	0.002
13	Spring Street and Temple Avenue	B	0.665	B	0.673	0.008	B	0.646	B	0.658	0.012
14	Spring Street and Redondo Avenue	A	0.571	A	0.582	0.011	C	0.741	C	0.752	0.011
15	Spring Street and Lakewood Boulevard	D	0.889	E	0.928	<b>0.039</b>	D	0.864	D	0.899	0.035
16	Spring Street and Clark Avenue	B	0.665	B	0.673	0.008	C	0.791	D	0.801	0.010
17	Willow Street and Redondo Avenue	C	0.764	C	0.772	0.008	D	0.879	D	0.889	0.010
18	Willow Street and Lakewood Boulevard	E	0.943	E	0.967	<b>0.024</b>	F	1.043	F	1.055	0.012
19	Willow Street and Clark Avenue	D	0.900	E	0.904	0.004	D	0.804	D	0.811	0.007
20	New Exit and Lakewood Boulevard	NA	NA	A	0.8*	NA	NA	NA	A	1.3*	NA

V/C = volume to capacity ratio for signalized intersections  
 \* Delay is in seconds per vehicles for unsignalized intersections  
**Bold** indicates significant project impact according to City of Long Beach guidelines

Source: Meyer, Mohaddes Associates, 2005.

Existing Plus Optimized Flights Conditions LOS E/F

- Carson Street and Clark Avenue (LOS E, PM)
- Wardlow Road and Cherry Avenue (LOS E, PM)
- Spring Street and Lakewood Boulevard (LOS E, AM)
- Willow Street and Lakewood Boulevard (LOS E, AM; LOS F, PM)
- Willow Street and Clark Avenue (LOS E, AM)

All of the remaining study area intersections are expected to operate at acceptable levels of service (LOS D or better) during the peak periods of the Existing Plus Optimized Flights scenario conditions.

Based on the threshold of significance used by the City of Long Beach, the Existing Plus Optimized Flights scenario would result in significant impacts at two locations during the weekday AM peak hour. Table 3.8-5 shows which locations would be significantly impacted, and the magnitude of the project-related impact on the V/C ratio or delay. The impacted intersections are:

Impacted Intersections in the Existing Plus Optimized Flights Scenario

- Spring Street and Lakewood Boulevard
- Willow Street and Lakewood Boulevard

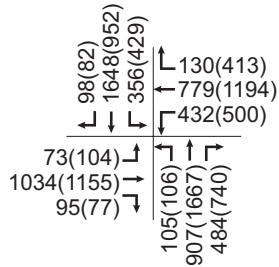
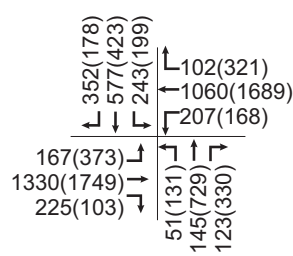
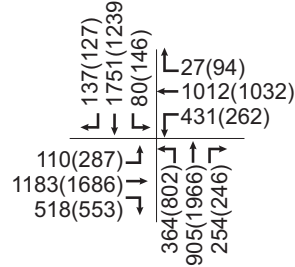
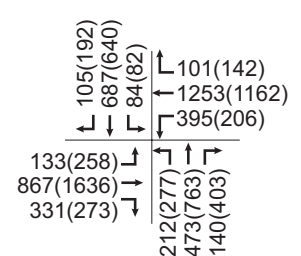
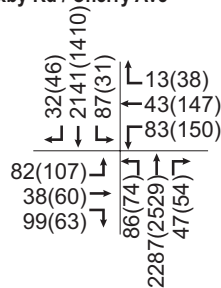
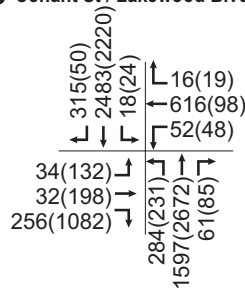
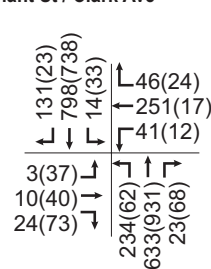
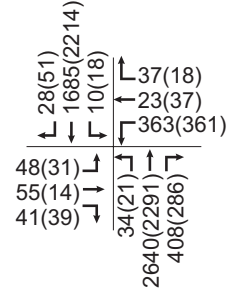
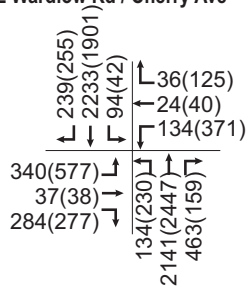
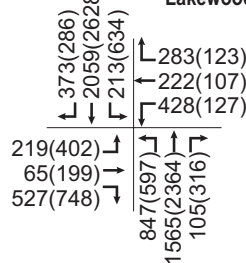
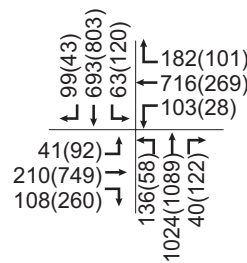
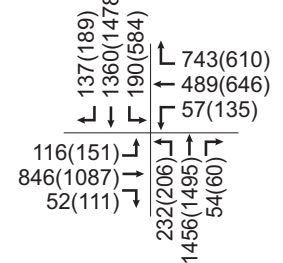
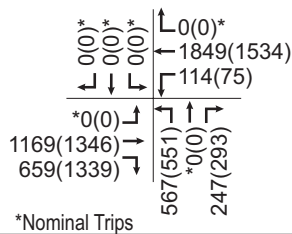
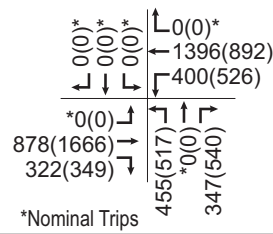
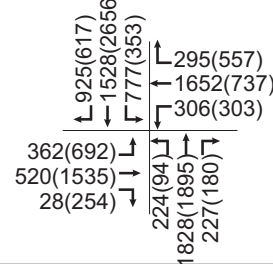
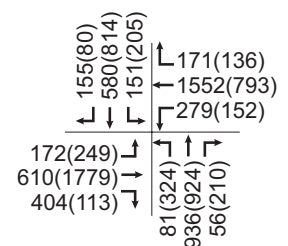
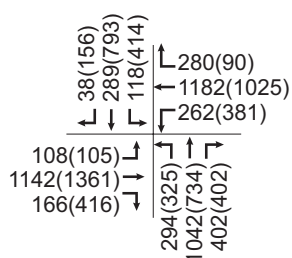
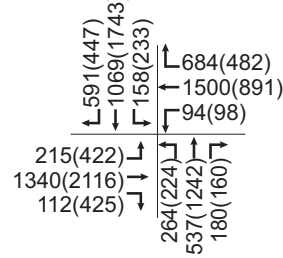
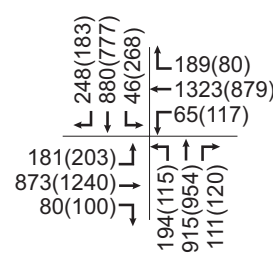
For the Spring Street at Lakewood Boulevard intersection, the intersection would reach LOS E when approximately 375 additional AM peak hour trips occur. Using the six percent peak hour factor, and 1.77 daily trips per passenger, this equates into an approximate increase of 3,500 ADPM passengers (45 percent of the total added) over 2005 conditions.

At the Willow Street and Lakewood Boulevard intersection, the intersection currently operates at LOS E, and would exceed the 0.02 V/C impact threshold when approximately 675 additional AM peak hour trips occur. Again using the six percent peak hour factor and 1.77 daily trips per passenger, this intersection would reach the impact threshold when approximately 6,340 additional ADPM passengers (81 percent of the total trips added with the Optimized Flights scenario) use the airport.

**Impact 3.8-1**     *The Existing Plus Optimized Flights scenario would result in significant impacts at the Spring Street/Lakewood Boulevard and the Willow Street/ Lakewood Boulevard intersections during the weekday AM peak hour. With the implementation of MM 3.8-1, this impact would be reduced to less than significant.*

*Year 2020 Evaluation*

For consistency purposes, all baseline 2020 conditions have been obtained from the Douglas Park EIR. This EIR has determined future background traffic volumes on the study area roadways and intersections, which include two primary variables: (1) ambient traffic growth rate, and (2) traffic due to known related development projects. The background traffic forecasts include a determination of the annual ambient traffic growth rate combined with specific cumulative development projects in the area, which may affect increases in local traffic. For the Proposed Project with Optimized Flights scenario, the implementation of the Douglas Park project is also considered a cumulative project. Therefore, the Douglas Park project with

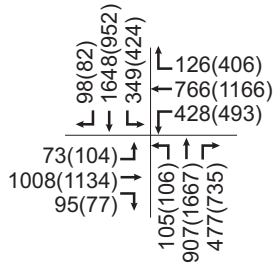
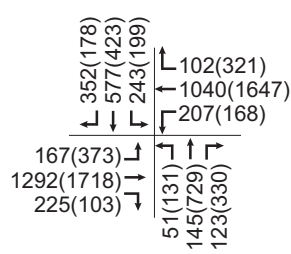
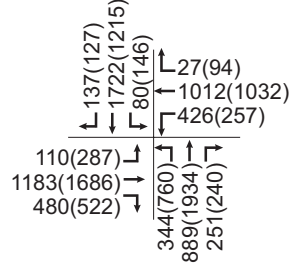
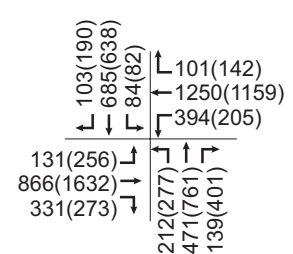
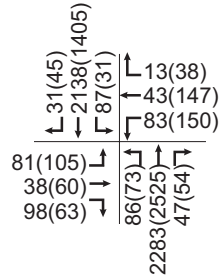
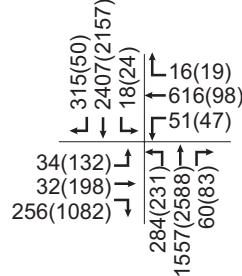
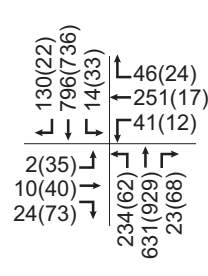
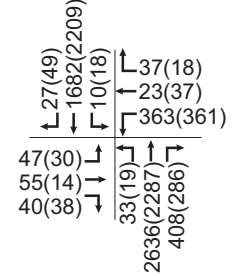
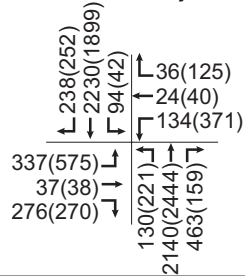
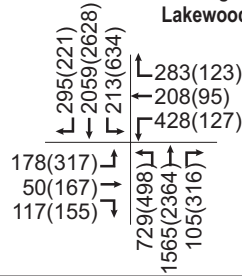
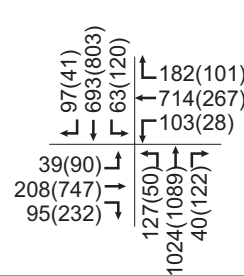
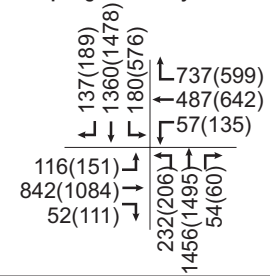
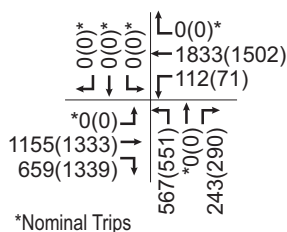
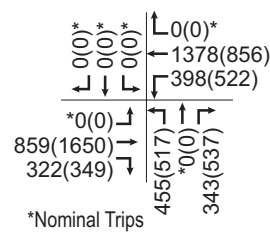
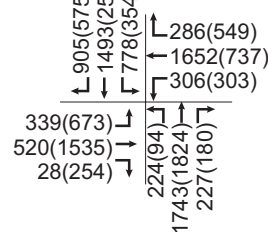
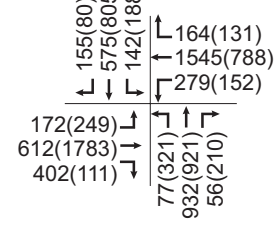
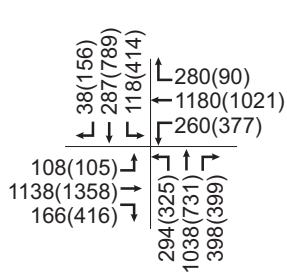
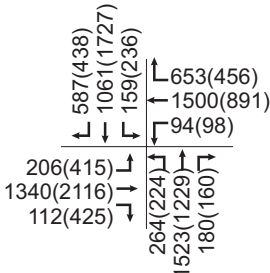
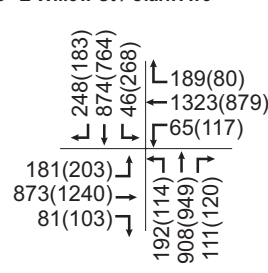
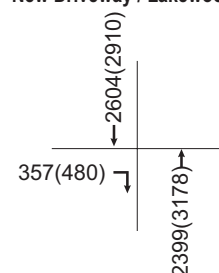
**1 Carson St / Cherry Ave****2 Carson St / Paramount Blvd****3 Carson St / Lakewood Blvd****4 Carson St / Clark Ave****5 Bixby Rd / Cherry Ave****6 Conant St / Lakewood Blvd****7 Conant St / Clark Ave****8 E 36th St / Cherry Ave****9 E Wardlow Rd / Cherry Ave****10 E Wardlow Rd / Dr. Douglas Rd / Lakewood Blvd****11 E Wardlow Rd / Clark Ave****12 E Spring St / Cherry Ave****13 E Spring St / Temple Ave****14 E Spring St / Redondo Ave****15 E Spring St / Lakewood Blvd****16 E Spring St / Clark Ave****17 E Willow St / Redondo Ave****18 E Willow St / Lakewood Blvd****19 E Willow St / Clark Ave**

## 2020 No-Project with Optimized Flights - Peak Hour Volumes AM(PM)

Long Beach Airport Terminal Area Improvement Project

Exhibit 3.8-5



**1 Carson St / Cherry Ave****2 Carson St / Paramount Blvd****3 Carson St / Lakewood Blvd****4 Carson St / Clark Ave****5 Bixby Rd / Cherry Ave****6 Conant St / Lakewood Blvd****7 Conant St / Clark Ave****8 E 36th St / Cherry Ave****9 E Wardlow Rd / Cherry Ave****10 E Wardlow Rd / Dr. Douglas Rd / Lakewood Blvd****11 E Wardlow Rd / Clark Ave****12 E Spring St / Cherry Ave****13 E Spring St / Temple Ave****14 E Spring St / Redondo Ave****15 E Spring St / Lakewood Blvd****16 E Spring St / Clark Ave****17 E Willow St / Redondo Ave****18 E Willow St / Lakewood Blvd****19 E Willow St / Clark Ave****20 New Driveway / Lakewood**

## 2020 Proposed Project with Optimized Flights

### Peak Hour Volumes – AM(PM)

Long Beach Airport Terminal Area Improvement Project

Exhibit 3.8–6



adopted mitigation measures is considered as future baseline conditions for this analysis.<sup>2</sup> The Douglas Park EIR considered an increase in the number of trips for the Airport as a related development project. These trips have been taken into consideration in the 2020 project analyses. Only the difference between the additional trips due to Proposed Project with Optimized Flights scenario and the Douglas Park assumptions has been added in the traffic model.

As previously indicated, for determining impacts the 2020 Proposed Project with Optimized Flights scenario is compared to the 2020 No Project with Optimized Flights. All regional and cumulative growth, as well as mitigation measures associated with the Douglas Park project are assumed under both scenarios.<sup>3</sup> In the 2020 scenarios, the existing off-site parking facilities (Lot D) are not assumed to be available. For the 2020 No Project Optimized Flights scenario, the on-site parking structure would not be built, resulting in parking deficiency. Therefore, for the No Project Optimized Flights scenario, additional drop-off trips have been assumed. For the 2020 Proposed Project with Optimized Flights scenario, the new on-site parking structure would be available; however, as when parking demand begins to approach parking capacity, there would be a slight increase in drop-off trips. To factor in the drop off trips, an increase in the 2020 trips have been assumed. For the 2020 No Project Optimized Flights scenario there would be an approximate 25 to 30 percent increase in trips resulting in 2,162 AM peak hour trips and 2,272 PM peak hour trips. This is due to the approximate 4,400 parking space deficit, causing additional drop-off and off-site parking trips. For the 2020 Proposed Project with Optimized Flights scenario there would be an approximate five to six percent increase in trips, resulting in 1,843 AM peak hour trips and 1,868 PM peak hour trips. This is due to an approximate 950 parking space deficit. Therefore, the actual number of trips in the Proposed Project with Optimized Flights is lower than the 2020 No Project with Optimized Flights conditions. The 2020 traffic volumes for the No Project with Optimized Flights and the 2020 Proposed Project with Optimized Flights are shown in Exhibits 3.8-5 and 3.8-6, respectively.

The results of the analysis of the 2020 traffic conditions for the study intersections are summarized in Table 3.8-6, which includes a comparison to the no-project conditions. It can be seen that in the Proposed Project with Optimized Flights scenario, the lower traffic volumes result in an improvement in the volume/capacity ratio and no project impacts would occur.

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<sup>2</sup> A full description of the Douglas Park build-out conditions as used in this report are available at the City of Long Beach Planning Department, 333 West Ocean Boulevard, Long Beach or an online version is also available at: <http://www.longbeach.gov/apps/cd/projects/boeingair/issuues/home.htm>.

<sup>3</sup> The 2020 analysis considers all Douglas Park traffic and mitigations to be in place, including the Adaptive Management Control System (ATCS) and Intelligent Transportation Systems (ITS) improvements that are estimated to increase the saturation flow rate by 10 percent to 1,760 vehicles per hour.

**TABLE 3.8-6**  
**2020 NO-PROJECT OPTIMIZED FLIGHTS AND 2020 PROPOSED PROJECT WITH OPTIMIZED FLIGHTS PEAK-HOUR INTERSECTION LEVELS OF SERVICE**

Intersection		2020 Weekday Peak Hour									
		AM					PM				
		2020 No Project		2020 Plus Project and Optimized Flights		Diff. due to Proposed Project	2020 No Project		2020 Plus Project and Optimized Flights		Diff. due to Proposed Project
		LOS	V/C or Delay	LOS	V/C or Delay		LOS	V/C or Delay	LOS	V/C or Delay	
1	Carson Street and Cherry Avenue	E	0.918	E	0.905	-0.013	F	1.127	F	1.116	-0.011
2	Carson Street and Paramount Boulevard	C	0.761	C	0.754	-0.007	F	1.033	F	1.025	-0.008
3	Carson Street and Lakewood Boulevard	E	0.993	E	0.960	-0.033	F	1.037	F	1.030	-0.007
4	Carson Street and Clark Avenue	D	0.804	D	0.804	0.000	F	1.033	F	1.030	-0.003
5	Bixby Road and Cherry Avenue	C	0.705	C	0.704	-0.001	C	0.761	C	0.760	-0.001
6	Conant Street and Lakewood Boulevard	E	0.958	E	0.944	-0.014	F	1.022	F	1.006	-0.016
7	Conant Street and Clark Avenue	C	0.724	C	0.723	-0.001	A	0.460	A	0.458	-0.002
8	36th Street and Cherry Avenue	D	0.894	D	0.893	-0.001	C	0.779	C	0.777	-0.002
9	Wardlow Road and Cherry Avenue	D	0.884	D	0.876	-0.008	E	0.953	E	0.945	-0.008
10	Wardlow Road/Douglas Drive and Lakewood Boulevard	F	1.227	E	0.961	-0.266	F	1.247	E	0.931	-0.316
11	Wardlow Road and Clark Avenue	B	0.688	B	0.698	0.010	C	0.759	C	0.749	-0.010
12	Spring Street and Cherry Avenue	D	0.836	D	0.834	-0.002	E	0.902	D	0.899	-0.003
13	Spring Street and Temple Avenue	C	0.738	C	0.737	-0.001	F	1.097	F	1.095	-0.002
14	Spring Street and Redondo Avenue	B	0.617	B	0.613	-0.004	E	0.831	E	0.827	-0.004
15	Spring Street and Lakewood Boulevard	F	1.112	F	1.093	-0.019	F	1.248	F	1.223	-0.025
16	Spring Street and Clark Avenue	C	0.733	C	0.728	-0.005	E	0.920	E	0.917	-0.003
17	Willow Street and Redondo Avenue	C	0.745	C	0.741	-0.004	E	0.917	E	0.914	-0.003
18	Willow Street and Lakewood Boulevard	E	0.977	E	0.968	-0.009	F	1.097	F	1.092	-0.005
19	Willow Street and Clark Avenue	E	0.954	E	0.951	-0.003	D	0.809	D	0.805	-0.004
20	New Exit/Lakewood Boulevard	NA	NA	A	1.0*	NA	NA	NA	A	1.9*	NA
V/C = volume to capacity ratio for signalized intersections											
* Delay is in seconds per vehicles for unsignalized intersections											
Source: Meyer Mohaddes Associates, 2005.											

**Threshold 2:** *Impacts to transportation and circulation would be considered to be significant if the project would contribute 500 or more net daily trips (total both directions) or 50 more net hourly trips (total both directions) to a residential street segment.*

#### Construction-Related Impacts

Construction trips would not use residential streets to access the Airport. The construction activities would take place off of Donald Douglas Drive and Lakewood Boulevard for the terminal area improvements and off of Clark Avenue and Willow Street for improvements to Parcel O. All construction vehicles would use I-405 and Lakewood Boulevard to access the terminal area site and Clark Avenue for access to Parcel O during daytime construction activities. Though there are residential streets east of Clark Avenue, this route does not traverse internal to residential neighborhoods. There would be no significant impacts and no mitigation measures are required.

#### Project Related Impacts

The Proposed Project would not alter the travel routes currently used by Airport patrons. With the access to the Airport being off of Lakewood Boulevard most trips access the site from I-405 and directly from Lakewood Boulevard. Those accessing Parcel O (for temporary parking if required during the construction of the parking structure and later for general aviation) Clark Avenue would be used. There would be no significant impacts and no mitigation measures are required.

#### Additional Effects Related to Optimized Flights

Though the number of trips associated with the Airport would increase, the travel routes to and from the Airport would not be altered. As indicated above, the access to the Airport is off of Lakewood Boulevard and non-residential uses are immediately adjacent to the Airport minimizing the opportunity for cut through trips. Access to Parcel O would be off of Clark Avenue. As previously indicated, there are residential streets east of Clark Avenue; access to Parcel O would not encourage traversing internal to residential neighborhoods. There would be no significant impacts and no mitigation measures are required.

**Threshold 3:** *Impacts to transportation and circulation would be considered to be significant if the project would exceed either individually or cumulatively a level of service standard established by the county congestion management agency for designated roads or highways.*

The Congestion Management Program (CMP) is a statewide program that requires the system wide evaluation of arterial and freeway facilities. In Los Angeles County, the CMP is the responsibility of the Metropolitan Transportation Authority. CMP guidelines require the assessment of development project impacts on the freeway system and at selected arterial intersections that are on the designated CMP system. According to the CMP Traffic Impact Analysis (TIA) Guidelines developed by MTA, a traffic impact analysis is required given the following conditions:

- CMP arterial monitoring intersections, including freeway on- or off-ramps, where the proposed project would add 50 or more trips during either the AM or PM weekday peak hours.

- CMP freeway monitoring locations where the proposed project would add 150 or more trips during either the AM or PM weekday peak hours.

The closest CMP arterial monitoring stations to the project with 50 or more added trips in the AM or PM peak hours are at the intersections of Lakewood Boulevard and Carson Street, and Lakewood Boulevard and Willow Street. These intersections have been analyzed as part of the traffic impact study and the results of those analyses are presented in this traffic study report.

The closest freeway monitoring stations include I-405 north of State Route 22 (SR-22) and also I-405 at Santa Fe Avenue. In accordance with CMP guidelines, an increase of 0.02 or more in the D/C ratio with a resulting LOS F, or an increase of 0.02 or more in an existing LOS F is considered a significant impact.

### Construction-Related Impacts

There would not be sufficient construction trips to warrant a CMP Transportation Impact Analysis.

### Project Related Impacts

As previously indicated, the Proposed Project would not increase the number of trips associated with the Airport. These trips are based on the number of flights and passengers. These numbers would not be expected to appreciably increase. There would not be sufficient construction trips to warrant a CMP Transportation Impact Analysis.

### Additional Effects Related to Optimized Flights

Even with the Optimized Flights, a CMP Transportation Impact Analysis would not be warranted because the Proposed Project fails to add 150 or more trips at the CMP monitoring stations, in either direction during either the AM or PM weekday peak periods. However, the analysis was completed for informational purposes only and is summarized in Table 3.8-7 below. As indicated by the data in the table, the project is expected to have no significant CMP system impact on I-405. There would be no significant CMP impacts.

**TABLE 3.8-7  
CONGESTION MANAGEMENT PLAN FREEWAY ANALYSIS**

	I-405 at Santa Fe Ave				I-405 north of SR-22			
	AM		PM		AM		PM	
	NB	SB	NB	SB	NB	SB	NB	SB
2003 Volumes	8223	7773	7347	8116	8558	7305	7435	12726
Growth per Year	0.007	0.007	0.007	0.007	0.007	0.007	0.007	0.007
Added Growth (2003 to 2013)	576	544	514	568	599	511	520	891
Background Volume for Year 2013	8799	8317	7861	8684	9157	7816	7955	13617
Added Volume from project	64	121	104	81	129	68	86	111
Total Volume w/project (2013)	8862	8438	7965	8765	9286	7885	8042	13728
Capacity	8000	8000	8000	8000	8000	10000	8000	10000
D/C-w/project (2013)	1.108	1.055	0.996	1.096	1.161	0.788	1.005	1.373
LOS	F(0)	F(0)	E	F(0)	F(0)	D	F(0)	F(2)
Projected D/C w/o project	1.100	1.040	0.983	1.086	1.145	0.782	0.994	1.362
projected D/C w/ project	1.108	1.055	0.996	1.096	1.161	0.788	1.005	1.373
Change	<b>0.008</b>	<b>0.015</b>	<b>0.013</b>	<b>0.010</b>	<b>0.016</b>	<b>0.007</b>	<b>0.011</b>	<b>0.011</b>
Significant Impact	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>
Source: Meyer Mohaddes Associates, 2005.								

**Threshold 4: *Impacts to parking would be considered to be significant if the project would result in inadequate parking capacity.***

Construction-Related Impacts

During construction of the new parking structure, approximately 1,000 surface vehicular parking at the airport would be temporarily displaced. This may result in inadequate parking at the Airport during construction. However, an element of the Proposed Project is to provide temporary vehicular spaces in Parcel O, located on Clark Avenue near Willow Street, if necessary. The need for temporary vehicular parking in Parcel O would be determined prior to construction of the parking structure. Currently, there is some excess capacity in Lot D and the roof of the parking structure is not fully utilized. The proposed phasing identifies the construction of the parking structure in an early phase of improvements. If deemed to be necessary, Parcel O could be used for employee, rental cars, and public use parking with shuttle service provided. By moving employee parking to Parcel O, an additional 591 on-site spaces would be available for the public. However, this EIR has evaluated the use of Parcel O for temporary public use parking as a “worst-case” scenario. It is estimated that a total of 5.5 acres of Parcel O would be developed for temporary parking on a short-term basis. Parcel O would provide approximately 740 additional parking spaces. Shuttle bus service would transport passengers to and from the terminal area. With this project design feature, there would be no significant impacts associated with insufficient parking during construction.

Project Related Impacts

A component of the Proposed Project is the construction of a parking structure. The parking structure is expected to accommodate approximately 4,000 vehicles. The Proposed Project, when completed, would provide 6,286 parking spaces on site. This would also include on-site parking for rental cars. This assumes no off-site leased parking is required. Based on the Parking Adequacy Analysis Study conducted for the Airport in 2001, there is a need for 2.75 parking spaces for each 1,000 annual enplanements. Currently, there are approximately 2.9 MAP at the Airport. Assuming half of the total projected passenger load is enplanements, this would equate to approximately 1.5 million enplanements annually or the need for 4,125 parking spaces. Assuming the current 41 air carrier flights and the 25 commuter flights (minimum levels provided by the Airport Noise Compatibility Ordinance), there would be approximately 4.2 MAP. Using the same assumption of half the MAP being enplanements, there would be a need for approximately 5,850 parking spaces. The Proposed Project provides 6,286 parking spaces; therefore, there would be no parking impacts and no mitigation required.

Additional Effects Related to Optimized Flights

As indicated above in the discussion of Threshold 1, for the 2020 Proposed Project with Optimized Flights scenario, the new on-site parking structure would be available; however, there would be a potential deficit in parking. With the Optimized Flights scenario there are projected to approximately 5.28 MAP. Using the same assumption of half of the MAP being enplanements, there would be a need for 7,260 parking spaces. This would result in a short fall of approximately 970 parking spaces. This would be considered a significant impact.

**Impact 3.8-2** *With the Optimized Flights scenario, there would be insufficient parking to accommodate the additional passenger levels. With the implementation of MM 3.8-2, this impact would be reduced to a level considered less than significant.*

**Threshold 5:** *Impacts to transportation and circulation would be considered to be significant if the project would result in inconsistency with the General Plan.*

The evaluation of the applicable goals and policies of the General Plan *Circulation Element* and the *Strategic Plan 2010* is presented in Table 3.8-8.

### **Alternative A (2003 NOP)**

#### Construction-Related Impacts

The construction related impacts associated with Alternative A would be comparable to those identified for the Proposed Project. As with the Proposed Project, Alternative A would accommodate displaced parking through the temporary use of Parcel O for vehicular parking. Standard Condition SC 3.8-1 would address the construction related traffic concerns by identifying an approved access route that would avoid residential neighborhoods.

#### Project Related Impacts

Alternative A would not result in any transportation, circulation, or parking impacts. This alternative would function the same as the Proposed Project. The number of trips generated and the parking demand are all a function of the number of flights and passenger levels. This alternative would not alter the passenger and flight levels used in the analysis of the Proposed Project. Additionally, Alternative A would provide the same number of parking spaces as the Proposed Project; therefore, it would be able to accommodate the parking demand. There would be no impacts associated with Alternative A.

#### Additional Effects Related to Optimized Flights

As with the Proposed Project, the Existing Plus Optimized Flights scenario would result in impacts on circulation and parking. Impacts 3.8-1 and 3.8-2 would apply to Alternative A. The additional trips associated with the Optimized Flights and insufficient parking to accommodate the passenger levels would result in significant impacts; however, the implementation of the Mitigation Program would reduce these impacts to less than significant.

### **Alternative B (Reduced Facilities)**

#### Construction-Related Impacts

The construction related impacts associated with Alternative B would be comparable to those identified for the Proposed Project. As with the Proposed Project, Alternative B would accommodate displaced parking through the temporary use of Parcel O for vehicular parking. Standard Condition SC 3.8-1 would address the construction related traffic concerns by identifying an approved access route that would avoid residential neighborhoods.

**TABLE 3.8-8  
EVALUATION OF APPLICABLE PLANNING DOCUMENTS**

APPLICABLE PLANNING POLICY	CONSISTENCY EVALUATION
<p><b>Long Beach General Plan Circulation Element</b></p> <p><u>Transportation Goals</u></p> <p>Goal: The City of Long Beach is to maintain or improve our current ability to move people and goods to and from activity centers while reinforcing the quality of life in our neighborhoods.</p> <p>Objectives:</p> <ol style="list-style-type: none"> <li>1. Maintain traffic and transportation service levels at Level of Service "D" or at the 1987 LOS where that LOS was worse than "D."</li> <li>2. Accommodate reasonable, balanced growth.</li> <li>3. Maintain or enhance our quality of life.</li> </ol> <p><u>Recommendations from Transportation Element</u></p> <p>The following objectives and policies are taken from the "Recommendations" section of the Transportation Element, which address the future growth scenarios within the City and anticipated traffic problems associated with them. In order to manage the increase of traffic without jeopardizing the quality of life in the residential communities, a "policy plan" was created. The policy plan includes objectives and guidelines that provide guidance in decisions related to traffic operations and roadway improvements in determining the actions to implement in land use decisions.</p> <p><i>Roadway Improvements and Better Utilization of City Streets</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• Maintain Level of Service D or better on all streets and at all intersections.</li> <li>• Increase efficiency of operations of regional corridors, and major and minor arterials.</li> </ul> <p>Policy 3: Apply system management techniques, such as traffic signal synchronization or computerization, reversible lanes, parking prohibitions, left hand turn pockets, and recessed bus bays where appropriate to optimize the existing capacity on Regional Corridors, Major Arterials, and Minor Arterials.</p> <p><i>Airport</i></p> <p>Objectives:</p> <ul style="list-style-type: none"> <li>• Support the Long Beach Airport as a viable commercial aviation facility to serve the community needs while maintaining the quality of life of the adjacent residential neighborhoods.</li> <li>• Provide convenient ground access to and from the Airport by using public and private transit services.</li> </ul> <p>Policy 1: Adopt a long-range development plan for Long Beach Airport when the court decision regarding the number of flights and noise regulations is rendered. When this master plan is adopted, the Transportation Element should be amended accordingly.</p> <p>Policy 5: Monitor future development projects based on the effectiveness of trip reduction program.</p>	<p>The Proposed Project, as well as the other build alternatives, would be consistent with the goals and policies of the General Plan <i>Circulation Element</i>. As indicated in the analysis provided above, the Proposed Project would not result in a deterioration of the level of service standards. When the Optimized Flights scenario is overlaid on the existing conditions, there are two intersections that are found to be substandard and the trips associated with the Optimized Flights provide a greater than two percent contribution. However, in the 2020 evaluation with the Optimized Flights, this impact is reduced to a level of less than significant because of future the planned transportation improvements. Additionally, the Proposed Project provides for mitigation that would reduce impacts to less than significant should the flight levels evaluated in the Optimized Flights scenario ever be realized and the approved transportation improvements have not been implemented. The mitigation measure proposes the use of systems management techniques, such as signal synchronization or other means to enhance the efficiency of the traffic movement within the existing right of way. These measures are consistent with the objectives and policies outlined in the <i>Transportation Element</i>.</p> <p>When the <i>Transportation Element</i> was adopted in 1991 the Airport Settlement Agreement had not been reached and the Airport Noise Compatibility Ordinance had not been adopted. These programs are now in place. The Proposed Project does provide for development consistent with the long-range development plan provided for in the Airport Development Plan and is consistent with the Airport Noise Compatibility Ordinance. The Proposed Project would serve to enhance the Airport as a viable commercial facility and still maintain consistency with the Airport Noise Compatibility Ordinance, which was adopted as a means of balancing the aviation needs of the community with the quality of life for the adjacent residential neighborhoods. By providing sufficient on-site parking, the Proposed Project would reduce airport related uses (i.e., parking) off airport. Additionally, it would reduce the overall number of trips associated with the Airport because there would be fewer drop off trips.</p>

### Project Related Impacts

Alternative B would not result in any transportation, circulation, or parking impacts. This alternative would function the same as the Proposed Project. The number of trips generated and the parking demand are all a function of the number of flights and passenger levels. This alternative would not alter the passenger and flight levels used in the analysis of the Proposed Project. Additionally, Alternative B would provide the same number of parking spaces as the Proposed Project; therefore, it would be able to accommodate the parking demand. There would be no impacts associated with Alternative B.

### Additional Effects Related to Optimized Flights

As with the Proposed Project, the Existing Plus Optimized Flights scenario would result in impacts on circulation and parking. Impacts 3.8-1 and 3.8-2 would apply to Alternative B. The additional trips associated with the Optimized Flights and insufficient parking to accommodate the passenger levels would result in significant impacts; however, the implementation of the Mitigation Program would reduce these impacts to less than significant.

### ***Alternative C (No Project)***

### Construction-Related Impacts

There would be no construction related impacts associated with Alternative C because no improvements are proposed.

### Project Related Impacts

This alternative assumes the loss of the leased off-site parking (Lot D) because of the short-term nature of these leases. As a result, Alternative C would only provide 2,831 parking spaces on site. This amount of parking would be insufficient to accommodate the parking demand associated with the minimum flight levels provided by the Airport Noise Compatibility Ordinance. Based on the passenger levels associated with the minimum flight levels, there would be a need for 5,850 parking spaces. Alternative C would fall approximately 3,000 parking spaces short of the demand. This would be a significant impact. Given that the premise of this alternative is that there would be no improvements, MM 3.8-2 would not be applicable. Therefore, this would be an unavoidable, significant impact.

Tied to the shortage of parking, would be an increase in the number of trips compared to the Proposed Project and existing conditions.

### Additional Effects Related to Optimized Flights

In the no-project scenario, the new on-site parking structure would not have been built, the existing off-site satellite parking facility is not available for use, and there is an increase in the number of drop off trips. As discussed above, a drop off trip increases the number of trips per passenger, since one trip to and from the airport is required to drop off a departing passenger, and another trip to and from the airport is required to pick up the same passenger once they arrive back at the airport.

The 2020 no project analysis considers all Douglas Park traffic and mitigations to be in place, including physical roadway and intersection improvements, as well as the ATCS and ITS improvements proposed for mitigation.

The traffic volumes for the 2020 No Project with Optimized Flights was presented in Exhibit 3.8-5 and the peak hour levels of service were presented in Table 3.8-6. As shown in Table 3.8-6, the volume to capacity ratio is better at every intersection, except one with the Proposed Project with Optimized Flights compared to the No Project with Optimized Flights.

### **3.8.3 MITIGATION PROGRAM**

#### **Project Design Features**

- PDF 3.8-1 A component of the Proposed Project is the provision of a new parking structure that would accommodate 4,000 vehicles.
- PDF 3.8-2 The project would also include the extension of the south side of the Donald Douglas Drive loop to exit onto Lakewood Boulevard, with eastbound right turn only to southbound access on to Lakewood Boulevard.
- PDF 3.8-3 With the construction of the parking structure existing surface parking would be displaced. To address potential parking demand during construction, Parcel O would be developed to serve parking demand not met by existing facilities.

#### **Standard Conditions and Regulations**

- SC 3.8-1 As part of contract specification, the Airport shall require all construction trucks to access the Airport terminal area via the I-605 to I-405 and Lakewood Boulevard. Construction vehicles accessing Parcel O shall use this route and access the construction site off of Clark Avenue or Willow Street.

#### **Mitigation Measures**

The two impacted intersections along Lakewood Boulevard at Spring and Willow Streets are currently built out to the maximum feasible configuration. Additional improvements would require extensive right of way purchases that would impact several local businesses. Discussions with City staff indicate that no further lane additions are feasible at these two intersections. However, as discussed above, the impacts to these intersections under the Existing Plus Optimized Flights scenario are not expected until at a substantial number of the additional flights and associated passengers are added. For the Spring Street at Lakewood Boulevard intersection, the intersection would reach LOS E when approximately 375 additional AM peak hour trips or an increase of 3,500 ADPM passengers (45 percent of the total added) over 2005 conditions. At the Willow Street and Lakewood Boulevard intersection, the intersection currently operates at LOS E, and would exceed the 0.02 V/C impact threshold when approximately 675 additional AM peak hour trips or 6,340 additional ADPM passengers occur. Currently, the ADPM is 9,246 passengers. Therefore, impacts would be expected if the ADPM level reached 12,746 passengers.

Though the Spring Street/Lakewood Boulevard intersection would still operate at a deficient level of service in the 2020, this is not an impact of the Proposed Project or the Optimized Flights scenario. Elsewhere the improvements associated with the Douglas Park would accommodate the additional demand associated with the Optimized Flights scenario. The improvements for Douglas Park include various Adaptive Traffic Control System measures, which are expected to increase the saturation flow rate by 10 percent to 1,760 vehicles per hour. While these improvements are expected, they are not currently programmed in any capital improvement program; therefore, their implementation cannot be relied upon to mitigate the impacts of the Existing with Optimized Flights scenario. Though the Optimized Flights are not a

component of the Proposed Project, it is recommended that the following mitigation measure be adopted should the air carriers make the necessary adjustments to qualify for additional flight.

- MM 3.8-1 In conjunction with the allocation of additional flights in accordance with the Airport Noise Compatibility Ordinance (Optimized Flights) the City shall develop a traffic monitoring program when the ADPM passenger levels reach 12,700. The traffic monitoring program shall evaluate the LOS at the Spring Street and Lakewood Boulevard and the Willow Street and Lakewood Boulevard intersections. If deficient LOS is identified, the City of Long Beach shall develop and implement a mitigation program that includes transportation management control measures to enhance the efficiency of traffic movement. Post implementation monitoring shall be required to ensure that sufficient capacity enhancement have been provided to accommodate the traffic associated with the increased passenger levels. If no deficiency in LOS is identified, the traffic monitoring of the key intersections shall be conducted on an annual basis or until such time as the improvements provided for as part of the Douglas Park project are implemented.

With the Optimized Flights scenario the parking structure for the Airport would be insufficient to accommodate the additional passenger levels. Though the Optimized Flights scenario is not a component of the Proposed Project, the following mitigation measure is proposed to address this potential impact.

- MM 3.8-2 In conjunction with the allocation of additional flights in accordance with the Airport Noise Compatibility Ordinance (Optimized Flights) when the annual passenger levels reach 4.2 MAP the Airport Manager shall identify and develop additional on-site parking opportunities. This may include development of an additional parking structure within the Airport Entrance area. Implementation of the identified improvements would require separate documentation pursuant to CEQA.

#### **3.8.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION**

For all the build alternatives, with implementation of the Mitigation Program all transportation and circulation impacts would be reduced to a level of less than significant.